B. <u>Specification</u>

Please amend the paragraph at page 1, lines 20-25, as follows:

--A microlens array typically has a structure of arrayed minute lenses each having a diameter from about 2 to 3 microns to about 200 or 300 microns and an approximately semispherical profile. The microlens array is usable in a variety of applications, such as liquid-crystal display devices, light receivers and inter-fiber connections in optical ~~communcation~~ <u>communication</u> systems.--

Please amend the paragraphs at page 14, line 6, to page 15, line 8, as follows:

--A step of forming a sacrificial layer on the substrate after the plated layer forming step can also be added. In this case, the sacrificial layer is removed to separate the mold from the substrate in the mold separating step. This process of introducing the sacrificial layer will be described with reference to Figs. 11A-11E. A sacrificial layer 37 is formed on a mold master 31-35 fabricated by the electroplating as illustrated in Fig. 11A. A mold electrode 38 for electroplating is then formed as illustrated in Fig. 11B. The electroplating is performed using the [[the]] mold electrode 38 as a cathode in the electroplating liquid containing metal ions to form a mold 39 as illustrated in Fig. 11C. After that, the sacrificial layer 37 is etched and removed such that the mold 39 with the mold electrode 38 can be separated from the substrate 31 with the plated layer 35 as illustrated in Fig. 11D. The mold electrode 38 is then etched and removed to form the mold 39 as illustrated in Fig. 11E.

In this process the mold electrode 38 is removed. However, if it is unlikely that the lens surface will be contaminated by the mold electrode 38 or that the [[the]] mold electrode 38 will be damaged due to its small yield stress during the process of forming a microlens by molding, then mold electrode 38 need not be removed. The electrode 32 can be used as a sacrificial layer without forming a separate sacrificial layer 37, even though sacrificial layer 37 is shown formed on plated layer 35 and mask layer 33 in the fabrication process of Figs. 11A-11E.--

Please amend the paragraphs at page 25, line 9, to page 26, line 2, as follows:

--Thus, the relation (1) showing a relation between [[a]] an opening diameter or width and a minimum radius of curvature is found in this invention. With an opening diameter or width ϕ outside the above condition, a plated layer with a desired radius of curvature cannot be readily obtained, although this also depends on the electroplating bath and electroplating conditions.

The ~~minumum~~ minimum radius of curvature in the relation (1) will be described with reference to Fig. 5. The radius of curvature is determined in the following manner.

A mask layer with a plurality of openings is formed on a substrate, and electroplating is performed by using the substrate as a cathode and the ~~elecroplated~~ electroplating apparatus as illustrated in Fig. 4. A surface profile of a portion right above the opening in a thus-formed plated layer is measured, and its result is reduced to a radius

of curvature. A half of the bottom diameter ψ of the plated layer 5 illustrated in Fig. 3E is used as a parameter for indicating the electroplating growth time when the relation between the electroplating growth time and the radius of curvature is desired.--

Please amend the paragraph at page 32, line 8, to page 33, line 3, as follows:

--A process of fabricating a microlens using the above mold will now be described. Initially, an example of using the fabricated structure as a mold (not a mold master) for a microlens will be described with reference to Figs. 13A-13C. In Figs. 13A-13C, reference numeral 51 denotes a substrate, reference numeral 52 denotes an electrode layer, reference numeral 53 denotes a mask layer, reference numeral 54 denotes an opening, reference numeral 55 denotes a plated layer, reference numeral 57 denotes a glass layer, reference numeral 58 denotes a resin having a large refractive [[idex]] <u>index</u>, and reference numeral 59 denotes an ultraviolet-ray curing resin. The microlens mold has a convex shape, and the plated layer 55 extends continuously as illustrated in Fig. 13A. The ultraviolet-ray curing resin 59 is laid over the mold fabricated by the above method. The glass layer 57 is then placed on the resin 59, and the resin 59 is exposed to ultraviolet rays through the glass 57 to cure the resin 59. After that, the glass 57 and the resin 59 are separated from the mold. Thus, a concave microlens is obtained. The concave microlens has the resin with an inverted profile of the plated layer 55 on the glass 57 as illustrated in Fig. 13B.--

Please amend the paragraph at page 37, line 21, to page 38, line 9, as follows:

--Measurement of the radius of curvature and estimation of the semispherical profile will be described with reference to Fig. 9. A mask layer with a plurality of openings is formed on a substrate, electroplating is performed by using the substrate as a base and the electroplating apparatus as illustrated in Fig. 4, and the [[the]] radius of curvature is obtained by measuring a profile of the thus-formed plated layer right above the opening. More specifically, the radius of curvature of the microlens near its optical axis is determined by its surface profile, and a radius R of curvature in Fig. 9 is thus obtained. The surface profile is measured by the surface-shape measuring function which is one of the functions of the confocal scanning laser microscope. A measurement range is equal to a length of the opening diameter.--

Please amend the paragraph at page 38, line 26, to page 39, line 13, as follows:

--[[A]] <u>An</u> experiment for finding conditions meeting those requirements was performed using Ni electroplating and Cu electroplating. As an electroplating bath ~~which~~ <u>that</u> relatively readily achieves the bright electroplating, the Watts bath was used in the Ni electroplating. The electroplating bath of copper sulfate electroplating was used in the Cu electroplating. The composition of the Watts bath was a water solution to which the brightener was added. This water solution consisted of nickel (II) sulfate hexahydrate, nickel (II) chloride hexahydrate and boric acid at a weight ratio per liter of 270:40:40,

respectively. The temperature of the electroplating bath was set to 55 °C, and the Ni electroplating was performed under a constant voltage (an applied voltage is 1 V).--

Please amend the paragraph at page 41, lines 11-17, as follows:

--The results will be discussed concerning the same experiment performed using [[a]] an opening diameter of 10 μm and different mask material. ~~Aromatic~~ An aromatic polyamide acid solution was spin-coated on the substrate and the mask layer 13 of a polyimide was formed by a heat treatment. The substrate 11 and the electrode layer 12 were the same as those in the first embodiment.--

Please amend the paragraph at page 47, lines 6-12, as follows:

--Further, coating, exposure and development of the photoresist are performed using conventional photolithography to form an opening in the resist. The mask layer 33 at the resist opening is etched by the reactive ion etching using ~~oxigen~~ oxygen. Thus, the electrode layer 32 is exposed and the opening 34 is formed. The photoresist is removed thereafter.--

Please amend the paragraph at page 48, lines 1-9, as follows:

--PSG (phospho-silicate glass) with a ~~thickess~~ thickness of 1 μm is then deposited at 350 °C by a atmospheric-pressure CVD (chemical vapor deposition) method to form a sacrificial layer 37 as illustrated in Fig. 11A. Ti and Au are continuously layered with thicknesses of 10 nm and 200 nm on the above wafer, respectively, using an

electron-beam evaporation method. An electrode layer 38 for a mold is thus formed as illustrated in Fig. 11B.--

Please amend the paragraph at page 51, lines 18-24, as follows:

--PSG with a ~~thickess~~ <u>thickness</u> of 1 μm is then deposited at 350 °C by the atmospheric-pressure CVD method to form a sacrificial layer 37 as illustrated in Fig. 11A. Ti and Au are continuously layered with thicknesses of 10 nm and 200 nm on the above wafer, respectively, using the electron-beam evaporation method. An electrode layer 38 for a mold is thus formed as illustrated in Fig. 11B.--

Please amend the paragraph at page 54, lines 16-23, as follows:

--PSG with a ~~thickess~~ <u>thickness</u> of 1 μm is then deposited at 350 °C by the atmospheric-pressure CVD method to form a sacrificial layer 37 as illustrated in Fig. 11A. Ti and Au are continuously layered with thicknesses of 10 nm and 200 nm on the above wafer, respectively, using the electron-beam evaporation method. An electrode layer 38 for a mold is thus formed as illustrated in Fig. 11B.--

Please amend the paragraph at page 55, line 22, to page 56, line 5, as follows:

--A semispherical structure of a plated layer 35 is formed on a substrate 31 with an electrode layer 32, a mask layer 33 and an opening 34 by the same method as that of the third embodiment. PSG with a ~~thickess~~ <u>thickness</u> of 1 μm is then deposited at 350

°C by the atmospheric-pressure CVD method to form a sacrificial layer 37 as illustrated in Fig. 11A. Ti and Au are continuously layered with thicknesses of 10 nm and 200 nm on the above wafer, respectively, using the electron-beam evaporation method. An electrode layer 38 for a mold is thus formed as illustrated in Fig. 11B to fabricate a mold master.--